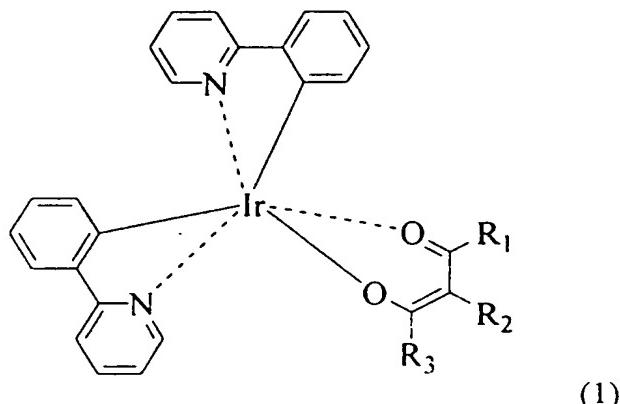


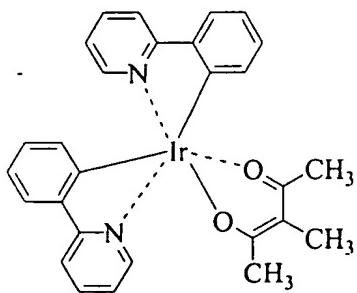
WHAT IS CLAIMED IS:

1. A compound represented by the following formula (1):

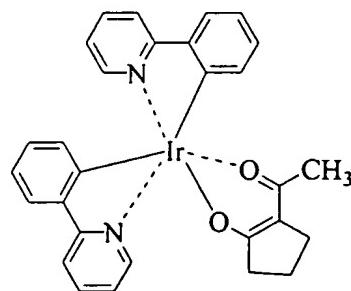


wherein R₁, R₂ and R₃ each are independently a straight or branched alkyl group having 1 to 18 carbon atoms, a substituted or un-substituted aromatic group having 5 to 18 carbon atoms, a heterocyclic aromatic group having 5 to 18 carbon atoms, and one or more hetero-atoms selected from the group consisting of N, O and S; or two or more of R₁, R₂ and R₃ taken together form an aliphatic cycle having 5 to 20 carbon atoms, an aromatic cycle having 5 to 20 carbon atoms, or a heterocyclic aromatic cycle having 5 to 20 carbon atoms, and one or more hetero-atoms selected from the group consisting of N, O and S.

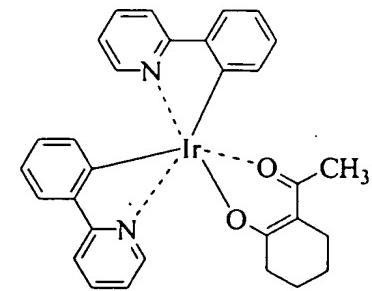
2. The compound according to claim 1, wherein the compound is Ir-1, Ir-2, or Ir-3.



Ir-1



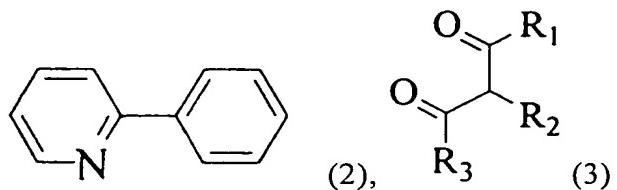
Ir-2



Ir-3

3. A preparation method of the compound of formula (1) comprising the steps of:

- 1) reacting the phenyl pyridine compound of formula (1) below with $\text{IrCl}_3 \cdot x\text{H}_2\text{O}$ or $\text{Na}_3\text{IrCl}_6 \cdot x\text{H}_2\text{O}$ to form a precursor compound; and
- 2) reacting the precursor compound obtained by the above step 1) with the compound of formula (3) below to obtain the compound of formula (1) according to claim 1:



wherein R₁, R₂ and R₃ each are the same as defined in claim 1.

- 10 4. An organic electroluminescent device having one or more organic thin layers formed between a first electrode and a second electrode, wherein at least any one layer of the organic thin layers comprises one or more compounds represented by the formula (1) according to claim 1 or 2.

15 5. The organic electroluminescent device according to claim 4, wherein the organic thin layer comprises one or more layer selected from the group consisting of a hole transport layer, an emission layer, a hole blocking layer, an electron transport layer, and an electron injection layer.

20 6. The organic electroluminescent device according to claim 5, wherein at least one or more compounds represented by the formula (1) according to claim 1 or 2 are used as dopant of the emission layer.

7. The organic electroluminescent device according to claim 5, wherein at least one or more compounds represented by the formula (1) according to claim 1 or 2 are used as host of the emission layer.